

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLWPB LATITUDE 27.385192
COUNTY Okeechobee STORET # _____ LONGITUDE -80.992253
DATE 12/07/2021 TIME 1500 SAMPLING AGENCY 21FLWPB
SITE NAME Chandler Slough North of 4598
FIELD ID/NAME G45E0140 RECEIVING BODY OF WATER Okeechobee

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>30</u> Silviculture <u>70</u> Field/Pasture <u>70</u> Agricultural <u>70</u> Residential <u>70</u> Commercial <u>70</u> Industry <u>70</u> Other (Specify) <u>70</u>								Landscape Development Intensity Index (LDI) <u>2.1</u>
Local Watershed Erosion (select one): ☐ None ☐ Slight ☒ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy				Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>10.0</u> m wide <u>0.04</u> m/s <u>0.04</u> m/s <u>0.04</u> m/s <u>0.4</u> m deep <u>0.4</u> m deep <u>0.4</u> m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>18+</u> Right Bank: <u>18+</u>				Hydrologic Modification Score (per FT 3101) <u>2</u>				
High Water Mark: <u>0.5</u> + <u>0.4</u> = <u>0.9</u> <u>7</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially ☐ No ☒ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☒ Lightly Shaded (11-45%) ☐ Heavily Shaded ☐ Moderate Shaded (46-80%)				

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify): _____		Smothering of Substrates Sand Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Silt Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Algae Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐	
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon		WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.2</u> <u>20.4</u> <u>7.18</u> <u>4.97</u> <u>50.7</u> <u>298.5</u> <u>0.14</u> <u>0.4</u> Mid: _____ Bottom: _____ Meter ID: _____ TOTAL DEPTH: <u>0.4</u>			
Woody Debris (Snags) <u>51.0</u> Undercut Banks / Roots Leaf Packs or Mat Aquatic Vegetation <u>2.2</u> Rock or Shell Rubble Sand Mud / Muck / Silt Other Other		Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☒ No Lot Number: _____ Exp: _____		Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐ Clarity Clear ☒ Slightly Turbid ☐ Turbid ☒ Opaque ☐	
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐		System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) _____ AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.			

SAMPLING TEAM

Drew Liddick Jordan Skaggs

SIGNATURE: _____

[Signature]

DATE: _____

12/07/2021

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>21FLWPB</u>		STORET STATION NUMBER:	DATE (MM/DD/YY): <u>12/7/2021</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY:	LOCATION: <u>Chandler Slough</u>		FIELD ID/NAME: <u>G45E0140</u>

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>3</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>2</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>4</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.0 5 4 3 2 1
Habitat Smothering <u>25</u> Primary Score <u>11 14</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components Artificial Channelization <u>4</u> <u>13</u>	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank <u>10</u> Left Bank <u>10</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>10</u> Left Bank <u>3</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>7</u> Left Bank <u>10</u> Secondary Score <u>50 59</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

73

TOTAL SCORE

Date:	Analyst: <u>Skaggs/Ciddich</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

log jam

0.5v
0.5v
3v

2v
with hand 0.55

3v

Left Bank

3v

2v

2v

2v

2v

2v

0.5v

0.1
5

Location: Chandler Slough
Date: 12/7/2021
Sampler: Skaggs, Liddick

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

S Snags 0

R Roots/undercut banks _____

LP Leaf Packs (or mats) _____

V Aquatic Macrophytes 2.2

Pools total # observed = 0
range expected = _____

Average width 10 m

Average depth 0.4 m

Velocity measured at _____ meter mark.

WQ & chemistry taken at 100 meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

- human activities close
- low flow (only after rain)
- spoil banks ephemeral
- lichen lines submerged
- non-natives present

- only ~ 1/2 veg coverage susceptible

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

10m

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Chandler Slough County: _____ Date: 12/7/2021 Investigators: Skaggs, Liddich
STORET Station Number: _____

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1	N	N		60	1	N	N		
	2					2				
	3					3				
	4					4				
	5			16		5				24
	6					6				
	7					7				
	8					8				
	9	N	N			9	N	N		
10	1	N	N		70	1	N	N		
	2					2				
	3					3				
	4					4				
	5			18		5				20
	6					6				
	7					7				
	8					8				
	9	N	N			9	N	N		
20	1	N	N		80	1	N	N		
	2					2				
	3					3				
	4					4				
	5			18		5				32
	6					6				
	7					7				
	8					8				
	9	N	N			9	N	N		
30	1	N	N		90	1	N	N		
	2					2				
	3					3				
	4					4				
	5			22		5				28
	6					6				
	7					7				
	8					8				
	9	N	N			9	N	N		
40	1	N	N		100	1	N	N		
	2					2				
	3					3				
	4					4				
	5			16		5			24	24
	6					6				
	7					7				
	8					8				
	9	N	N			9	N	N		
50	1	N	N							
	2									
	3									
	4									
	5			18						
	6									
	7									
	8									
	9	N	N							

Secchi depth 0.4
Estimated? No

points ranked 4-6 0
total points assessed 99
% points ranked 4-6 0

Check accompanying data collected at same site/date
Algal mat sample N/A
Linear Veg Survey X
Habitat Assessment X
SCI/Biorecon N/A
Water sample X
RQ-

Algal Thickness Rank
N rough, no algae, slimy, algae up to 1mm
3 >1mm - 6mm
4 >6mm - 20mm
5 >20mm - 10 cm
6 >10 cm

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.
Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.
Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.
Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: Chander Slough

Date:

Country:

Store Number:

Analyst: SKG/gj

12/7/2021

Signature:

Comments:

Comments: 50

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

Species for additional taxa names.										Meter Mark										Specimen collected (check)	Meter Mark										Specimen collected (check)												
HERBACEOUS SPECIES										0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100		HERBACEOUS SPECIES										0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			
Alternanthera philoxeroides																	X					Micranthemum glomeratum																	X		X		
Bacopa caroliniana																						Micranthemum umbrosum																					
Bacopa monnieri																						Myriophyllum aquaticum																					
Bidens mitis																						Najas guadelupensis																					
Boehmeria cylindrica																						Nuphar luteum																					
Centella asiatica																						Orontium aquaticum																					
Ceratophyllum demersum																						Panicum hemitomon																					
Chara																						Panicum repens																					
Cicuta maculata																						Panicum rigidulum																					
Cladium jamaicense																						Pistia stratioides																X					
Colocasia esculenta																						Polygonum glabra																					
Commelina diffusa																						Polygonum hydropiperoides																				XX	
Commelina virginica																						Polygonum punctatum																					
Crinum americanum																						Pontedaria cordata										X		X			X	X	X	X			
Diodia virginiana																						Potamogeton illinoensis																					
Eichhornia crassipes																X			X			Ruellia simplex																					
Eleocharis (wispy viviparous)																						Sacciolepis striata										X		XX			X	X	X	X			
Hydrilla verticillata																						Sagittaria kurziana																					
Hydrocotyle													Y	X	X							Sagittaria lancifolia																X					
Hygrophila polysperma																						Sagittaria latifolia																					
Hymenocallis																						Salvinia minima												X			X	X	X	X			
Lachnanthes caroliniana																						Samolus parviflora																					
Landoltia punctata																						Saururus cernuus																					
Lemna												Y				X	X	X	Y			Sparganium americanum																					
Limnophila sessiflora																						Typha																					
Ludwigia leptocarpa																						Vallisneria americana																					
Ludwigia palustris																						Zizania aquatica																					
Ludwigia peruviana																						<i>Mikania scandens</i>																					

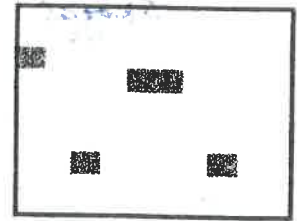
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

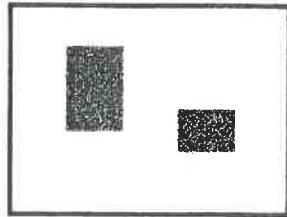
5% Macrophyte Coverage



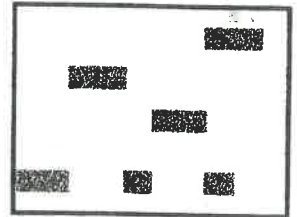
5% Macrophyte Coverage



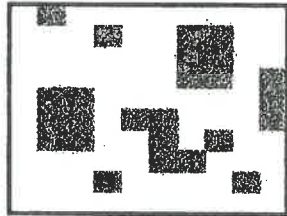
10% Macrophyte Coverage



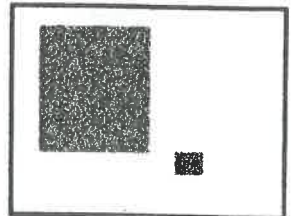
10% Macrophyte Coverage



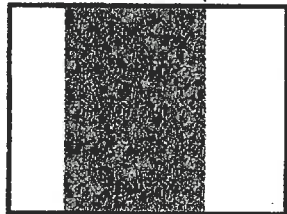
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

